FIG.1

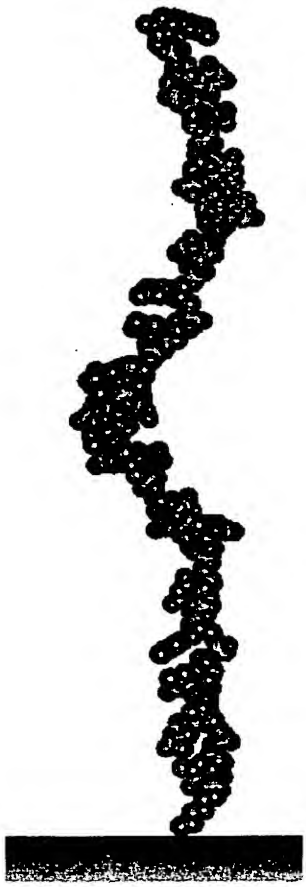


FIG.2

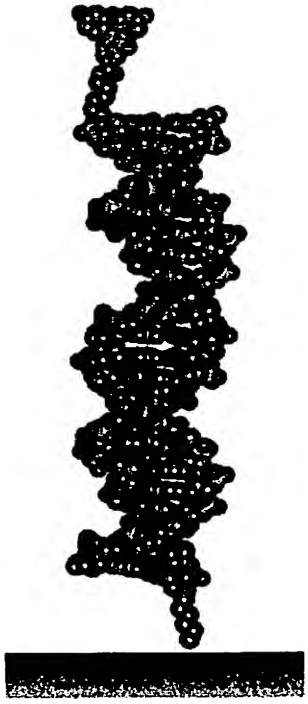
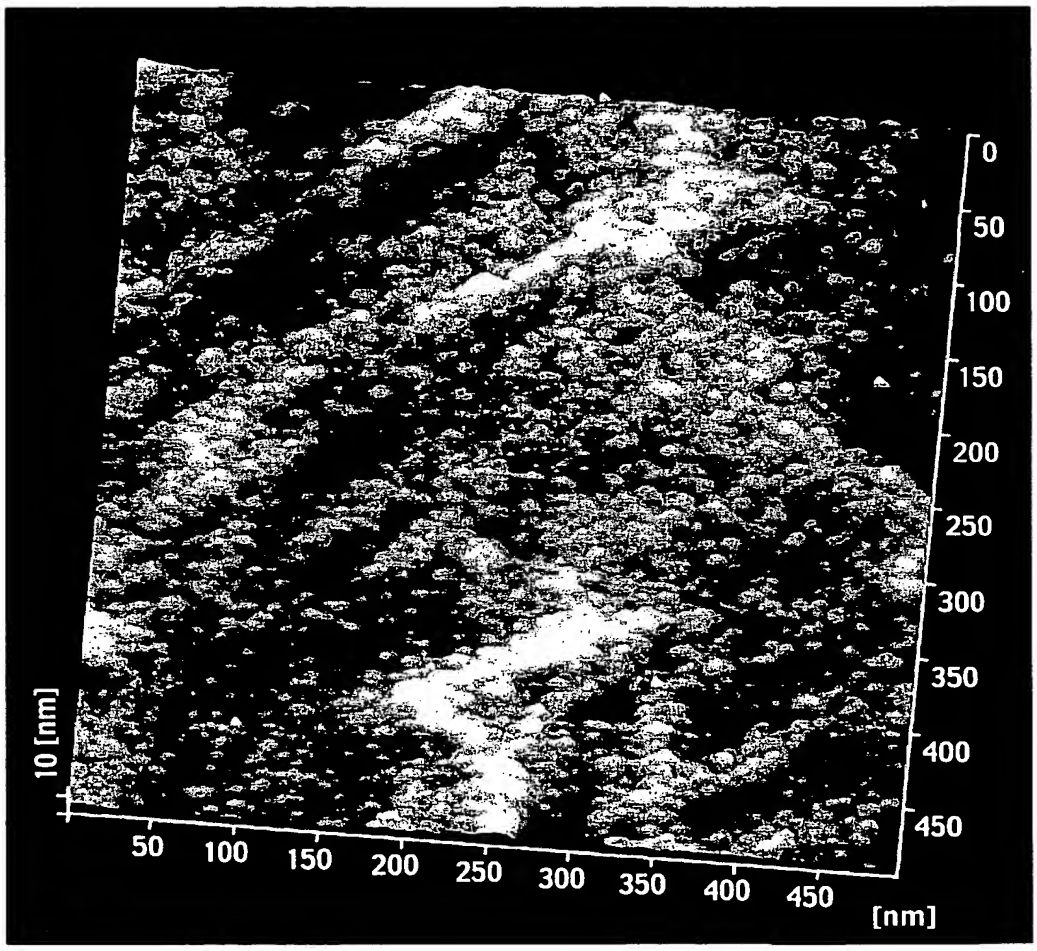


FIG.3

(a)


10 [nm]
50
100
150
200
250
300
350
400
450
[nm]
0
50
100
150
200
250
300
350
400
450

(b)

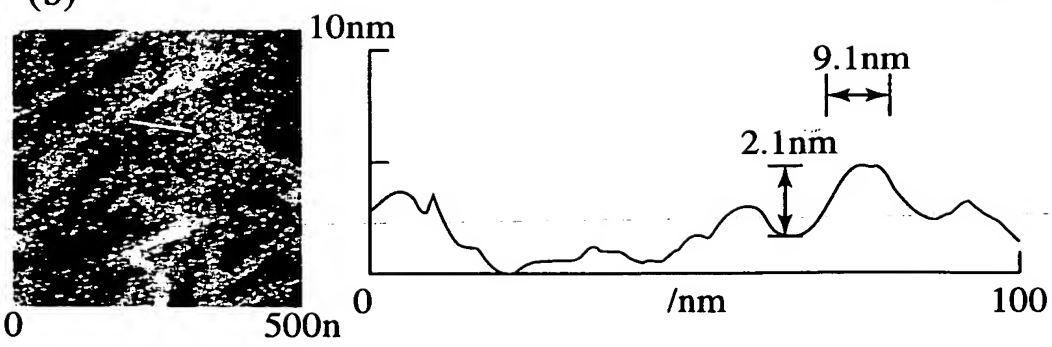
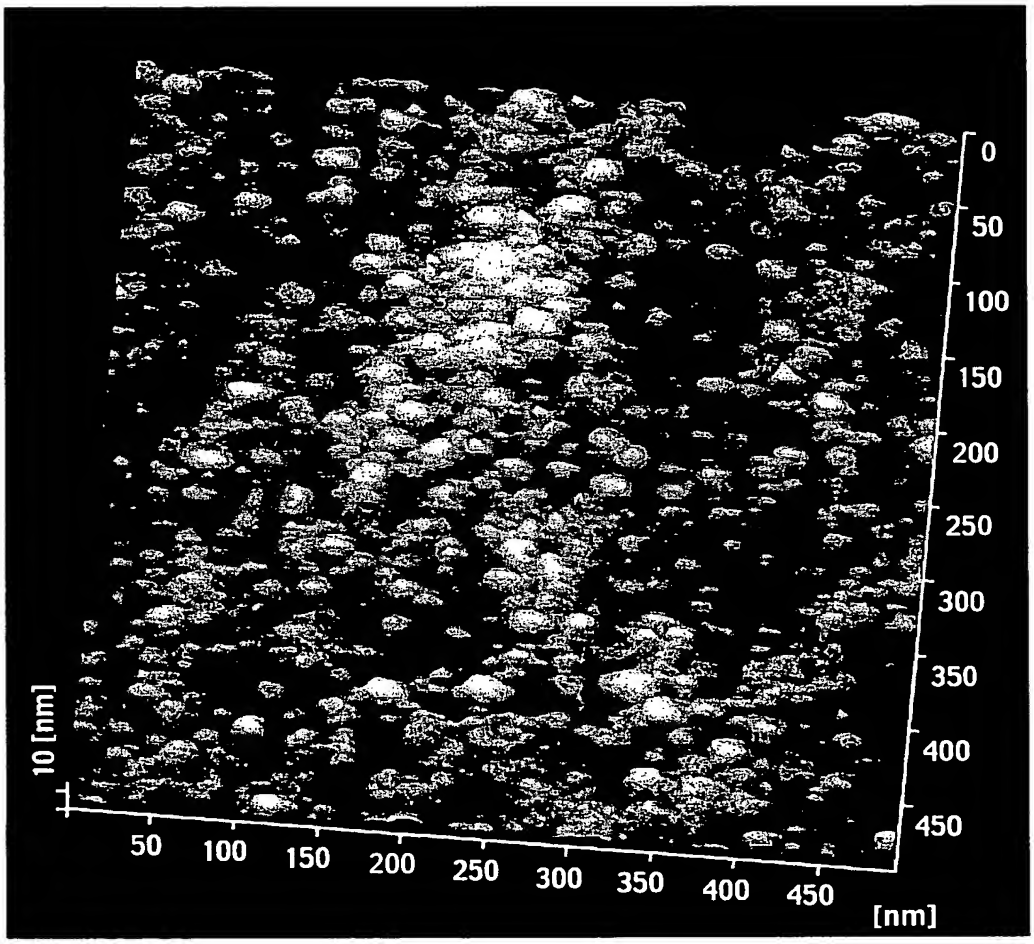

10nm
9.1nm
2.1nm
0
500n
0
/nm
100

FIG.4

(a)


0
50
100
150
200
250
300
350
400
450
[nm]
10 [nm]
50
100
150
200
250
300
350
400
450

(b)

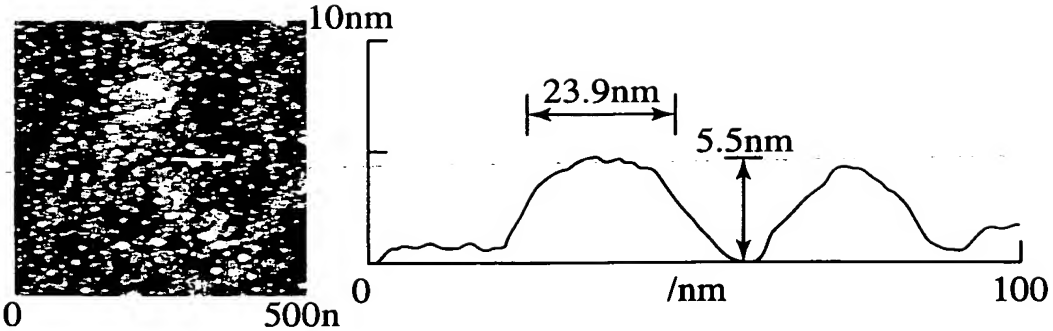
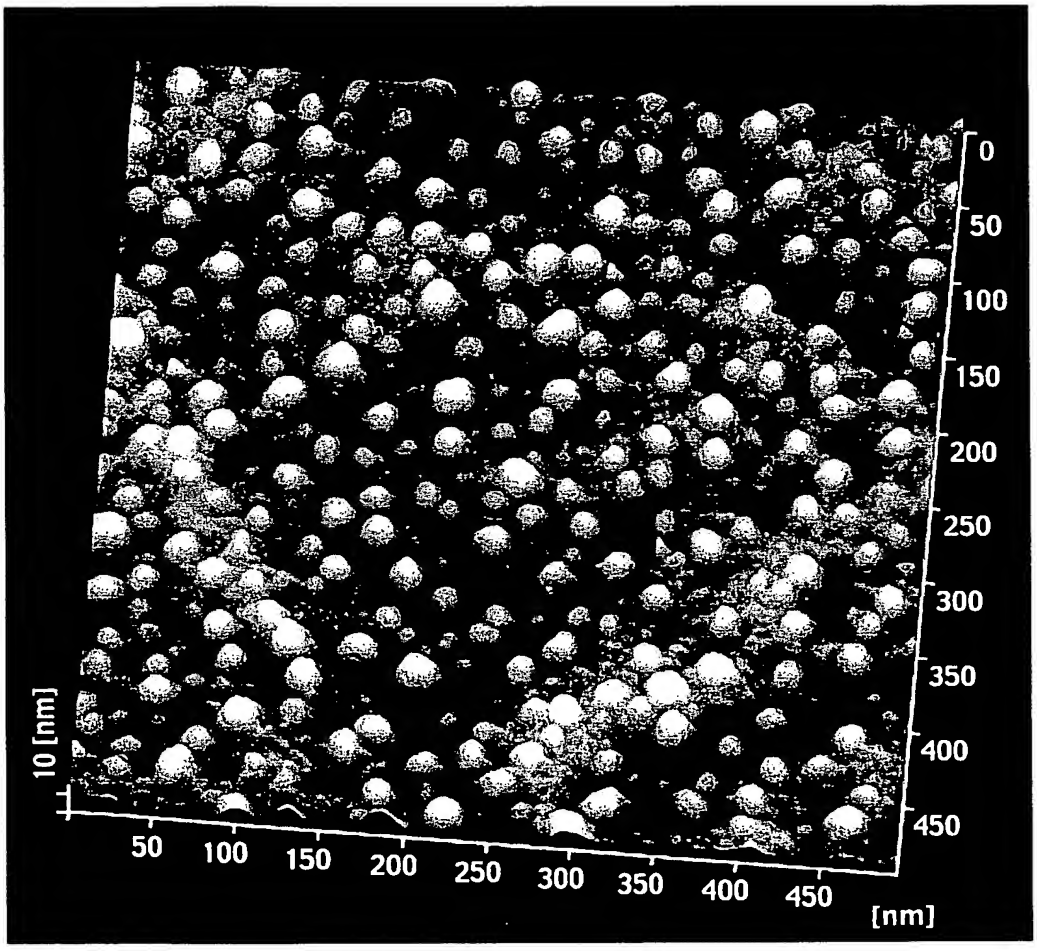

10nm
23.9nm
5.5nm
0
500n
0
/nm
100

FIG.5

(a)


0
50
100
150
200
250
300
350
400
450
10 [nm]
50
100
150
200
250
300
350
400
450
[nm]

(b)

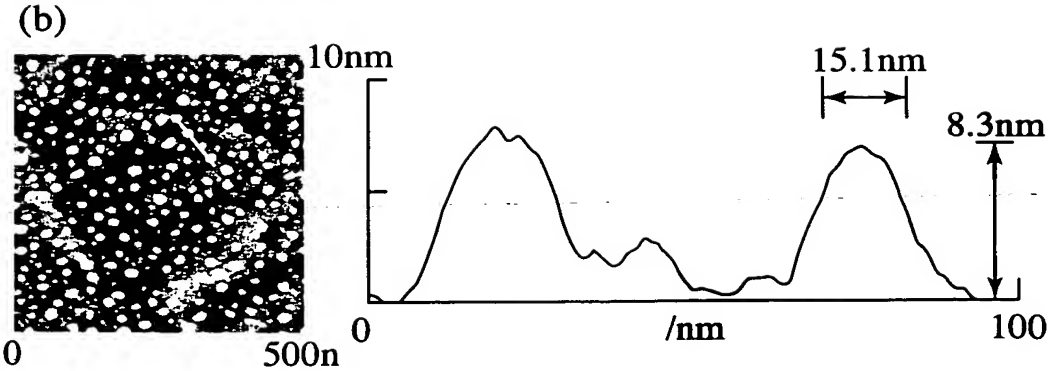

10nm
15.1nm
8.3nm
0
500n
0
/nm
100

FIG.6

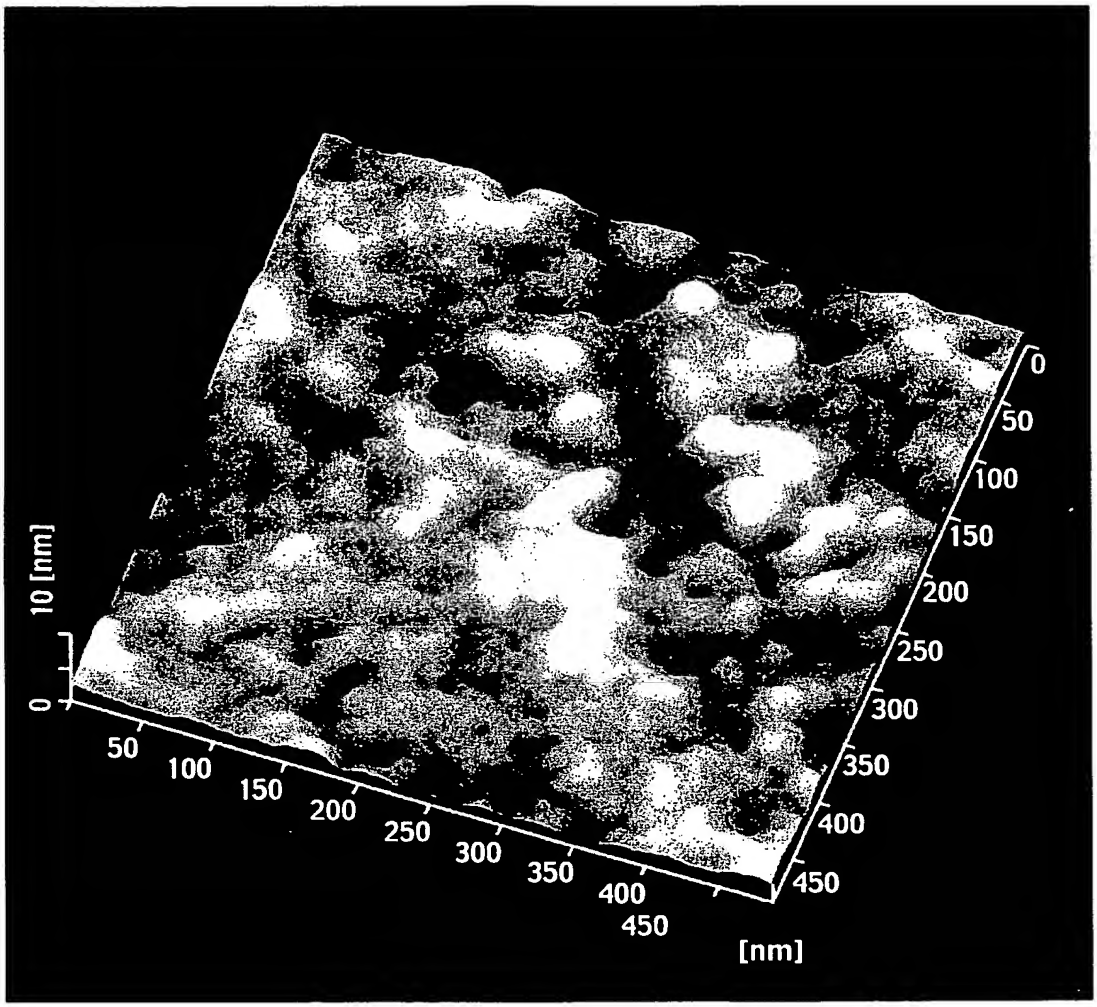

10 [nm]
0
50
100
150
200
250
300
350
400
450
[nm]
0
50
100
150
200
250
300
350
400
450

FIG.7

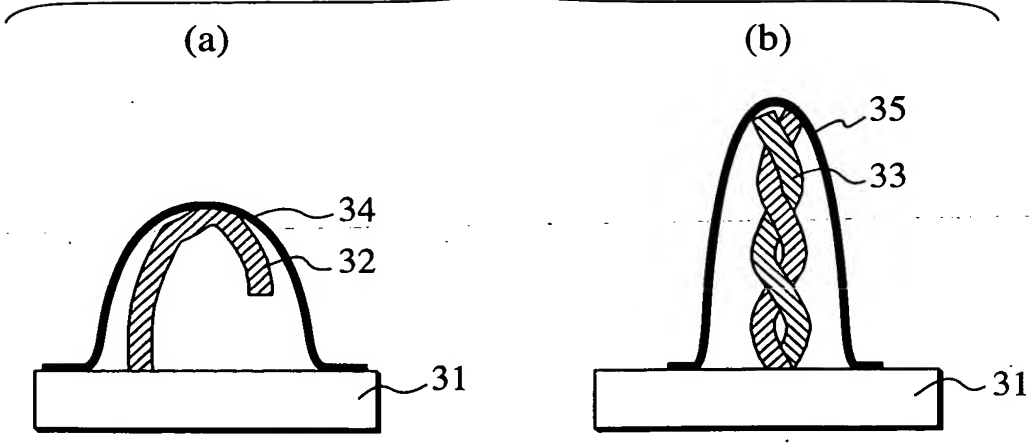

(a)
(b)
34
32
31
35
33
31

FIG.8

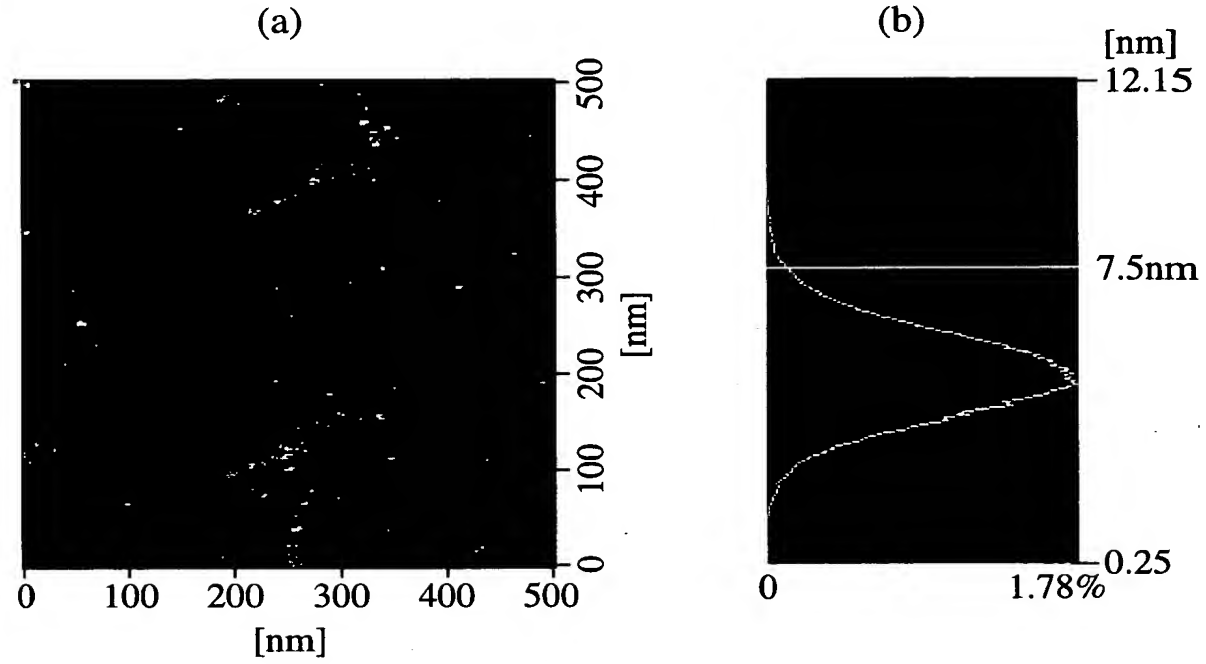

(a)
(b)
[nm]
12.15
7.5nm
0.25
0
1.78%
0
100
200
300
400
500
[nm]
[nm]

FIG.9

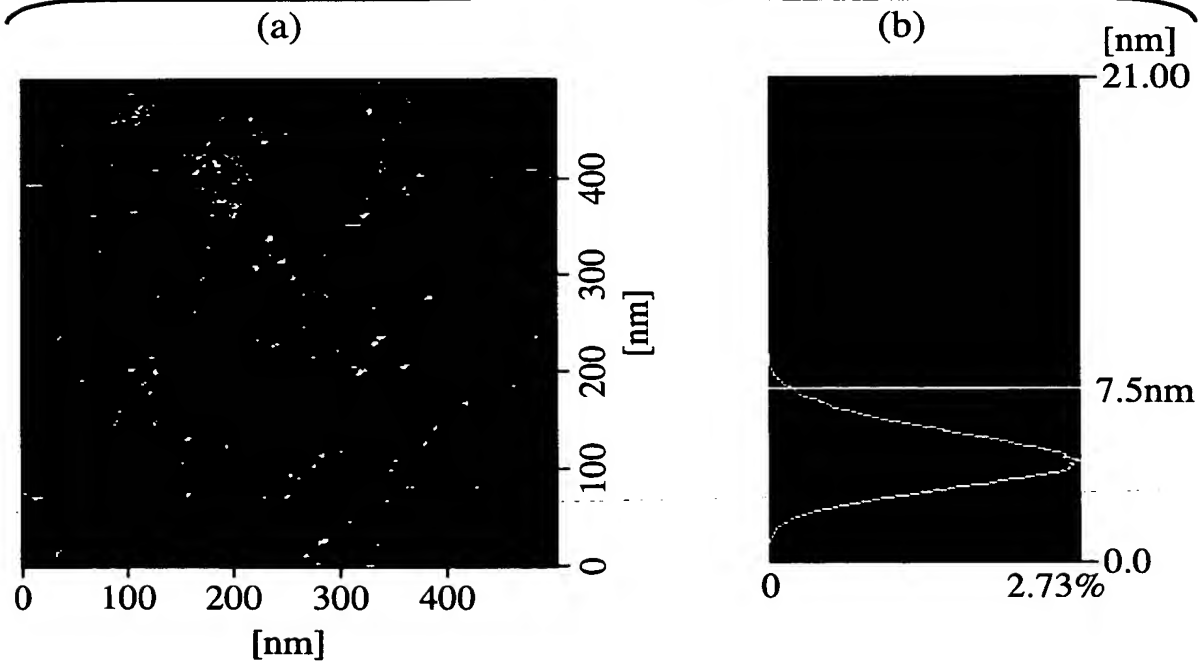

(a)
(b)
[nm]
21.00
7.5nm
0.0
0
2.73%
0
100
200
300
400
[nm]
[nm]

FIG.10

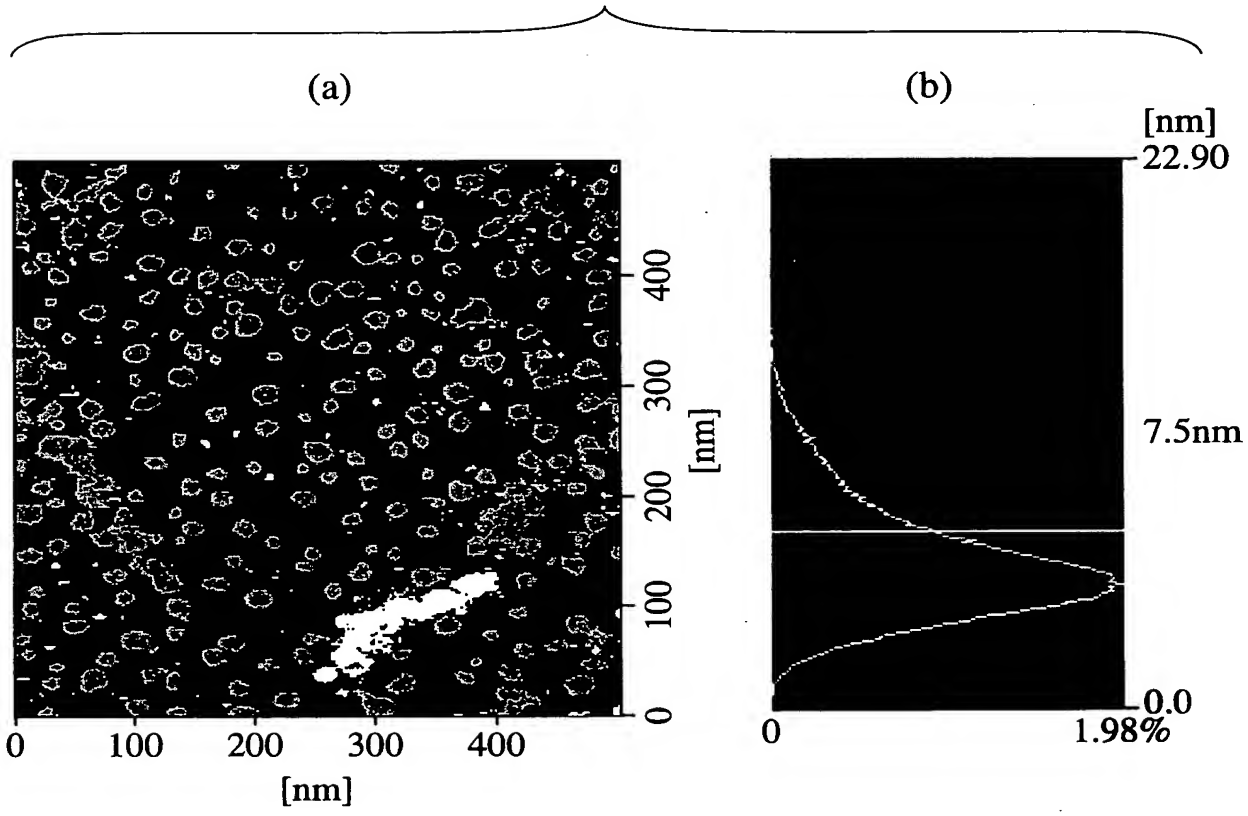


FIG. 11

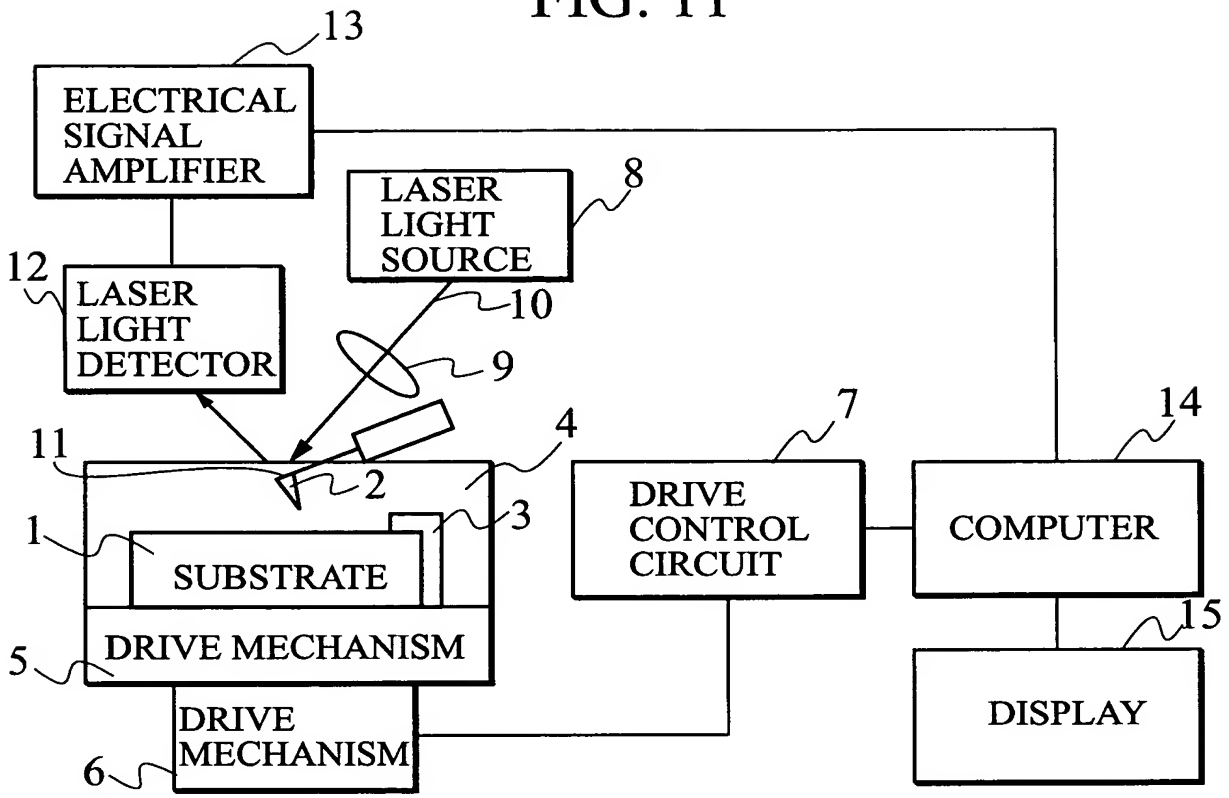

13
ELECTRICAL SIGNAL AMPLIFIER
LASER LIGHT SOURCE
8
12
LASER LIGHT DETECTOR
10
9
11
4
2
7
14
DRIVE CONTROL CIRCUIT
COMPUTER
1
SUBSTRATE
3
DRIVE MECHANISM
5
15
DISPLAY
DRIVE MECHANISM
6

FIG. 12

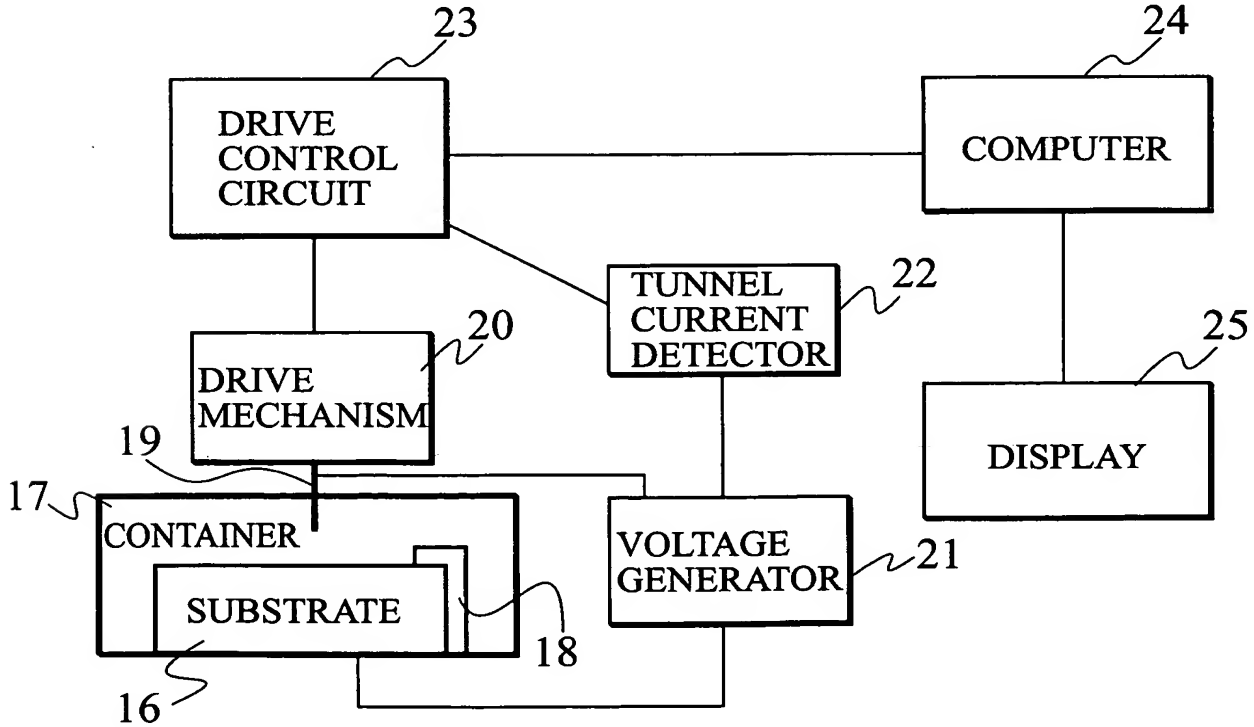

23
24
DRIVE CONTROL CIRCUIT
COMPUTER
TUNNEL CURRENT DETECTOR
22
20
25
DRIVE MECHANISM
DISPLAY
19
17
CONTAINER
VOLTAGE GENERATOR
21
SUBSTRATE
18
16

FIG. 13

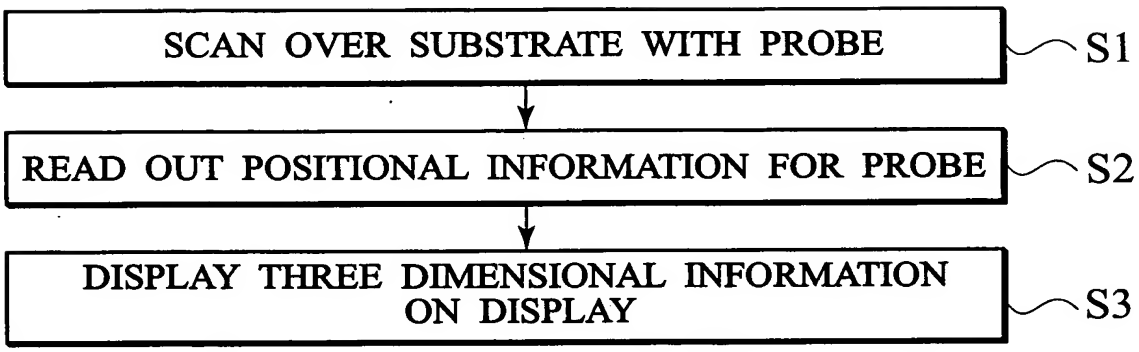

SCAN OVER SUBSTRATE WITH PROBE
S1
READ OUT POSITIONAL INFORMATION FOR PROBE
S2
DISPLAY THREE DIMENSIONAL INFORMATION ON DISPLAY
S3

FIG. 14

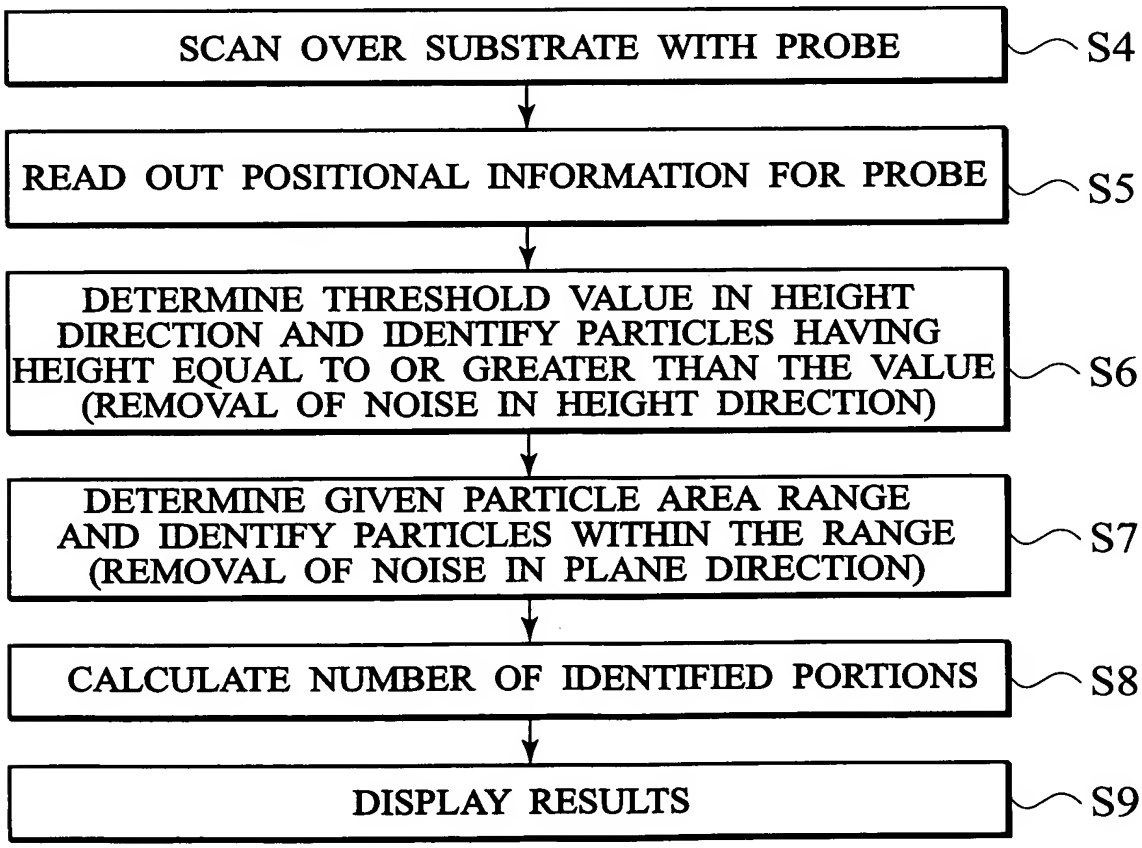

SCAN OVER SUBSTRATE WITH PROBE
S4
READ OUT POSITIONAL INFORMATION FOR PROBE
S5
DETERMINE THRESHOLD VALUE IN HEIGHT DIRECTION AND IDENTIFY PARTICLES HAVING HEIGHT EQUAL TO OR GREATER THAN THE VALUE (REMOVAL OF NOISE IN HEIGHT DIRECTION)
S6
DETERMINE GIVEN PARTICLE AREA RANGE AND IDENTIFY PARTICLES WITHIN THE RANGE (REMOVAL OF NOISE IN PLANE DIRECTION)
S7
CALCULATE NUMBER OF IDENTIFIED PORTIONS
S8
DISPLAY RESULTS
S9

FIG. 15

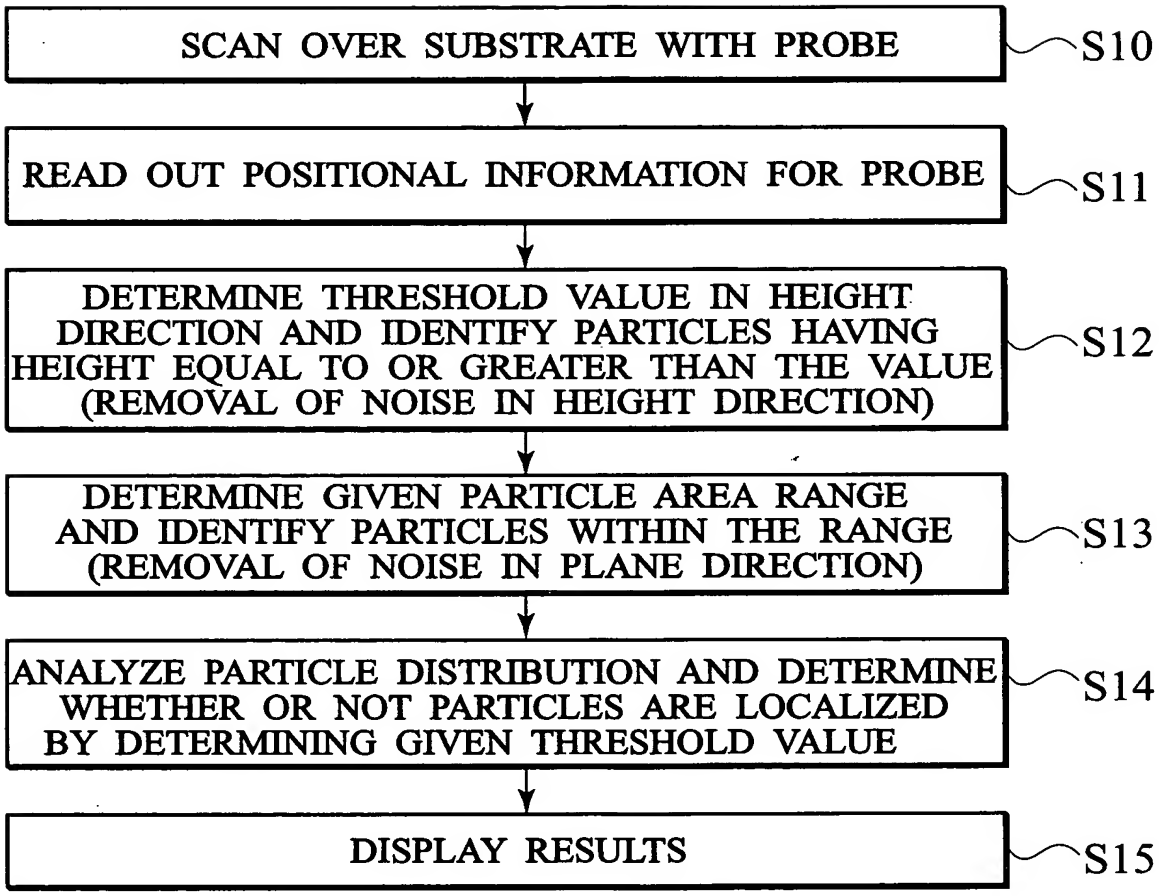

SCAN OVER SUBSTRATE WITH PROBE
S10
READ OUT POSITIONAL INFORMATION FOR PROBE
S11
DETERMINE THRESHOLD VALUE IN HEIGHT DIRECTION AND IDENTIFY PARTICLES HAVING HEIGHT EQUAL TO OR GREATER THAN THE VALUE (REMOVAL OF NOISE IN HEIGHT DIRECTION)
S12
DETERMINE GIVEN PARTICLE AREA RANGE AND IDENTIFY PARTICLES WITHIN THE RANGE (REMOVAL OF NOISE IN PLANE DIRECTION)
S13
ANALYZE PARTICLE DISTRIBUTION AND DETERMINE WHETHER OR NOT PARTICLES ARE LOCALIZED BY DETERMINING GIVEN THRESHOLD VALUE
S14
DISPLAY RESULTS
S15

FIG. 16

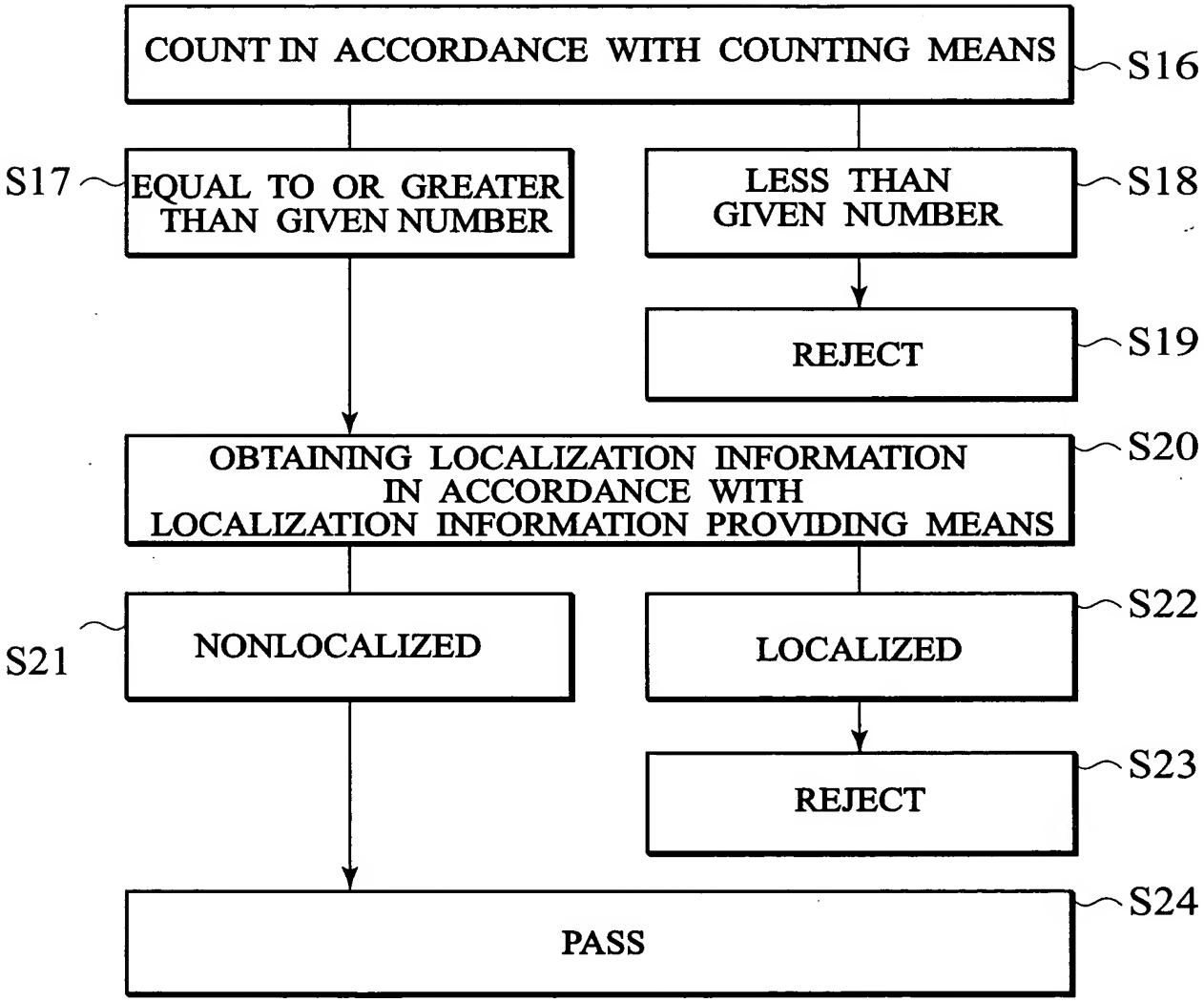

COUNT IN ACCORDANCE WITH COUNTING MEANS
S16
S17
EQUAL TO OR GREATER THAN GIVEN NUMBER
LESS THAN GIVEN NUMBER
S18
REJECT
S19
OBTAINING LOCALIZATION INFORMATION IN ACCORDANCE WITH LOCALIZATION INFORMATION PROVIDING MEANS
S20
S21
NONLOCALIZED
LOCALIZED
S22
REJECT
S23
PASS
S24

FIG.17

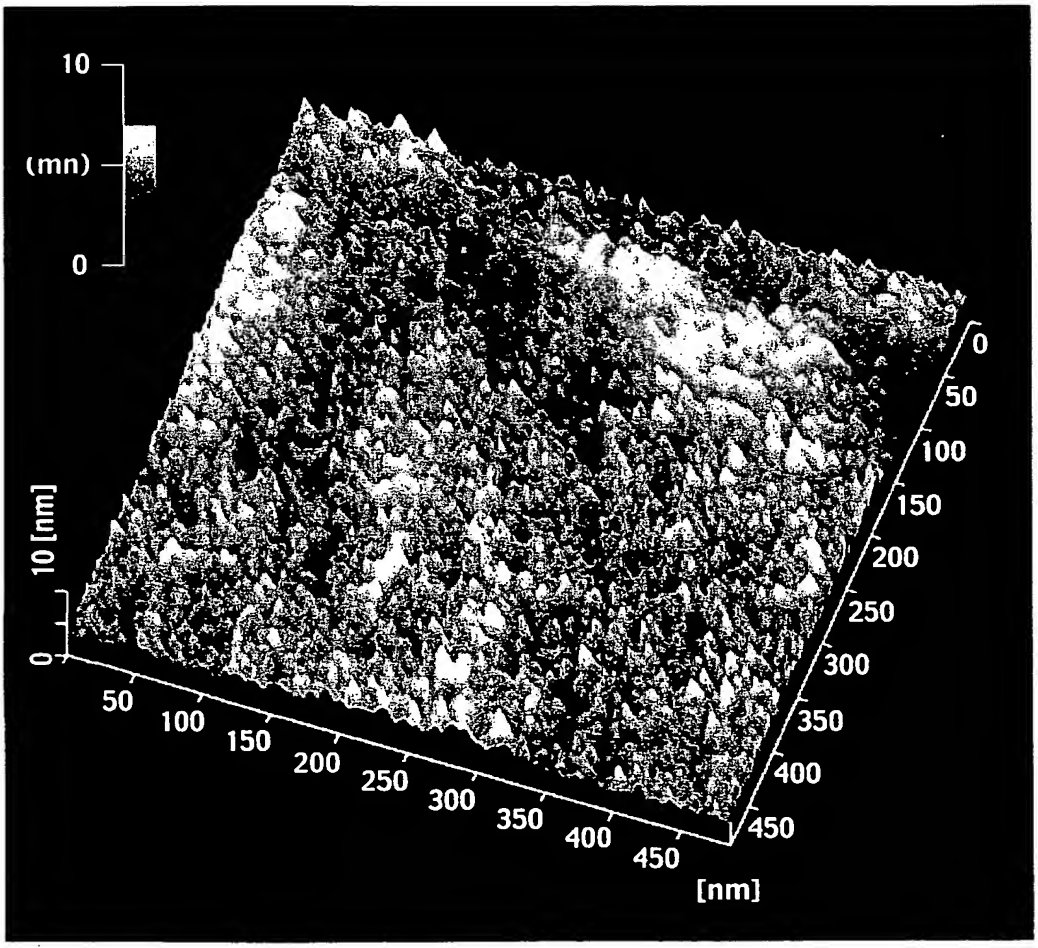

10
(mn)
0
10 [nm]
0
50
100
150
200
250
300
350
400
450
[nm]
0
50
100
150
200
250
300
350
400
450

FIG.18

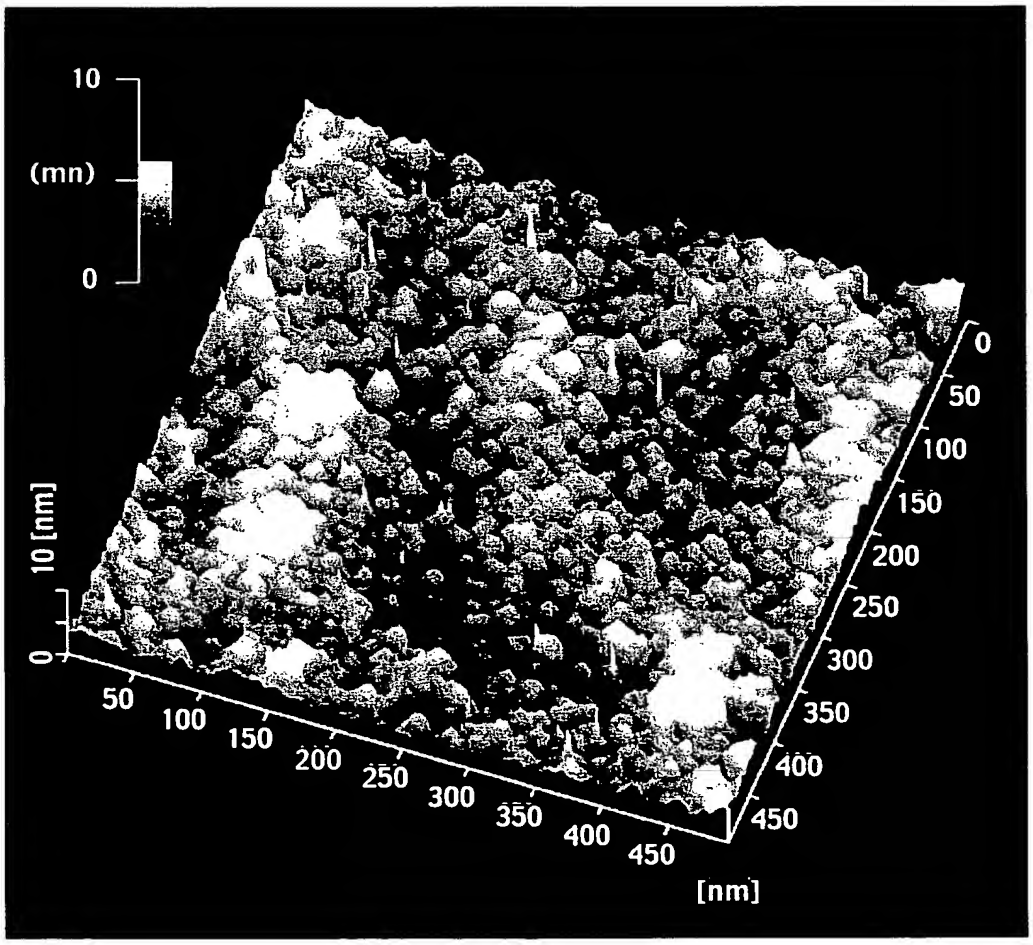

10
(mn)
0
10 [nm]
0
50
100
150
200
250
300
350
400
450
[nm]
0
50
100
150
200
250
300
350
400
450

FIG.19

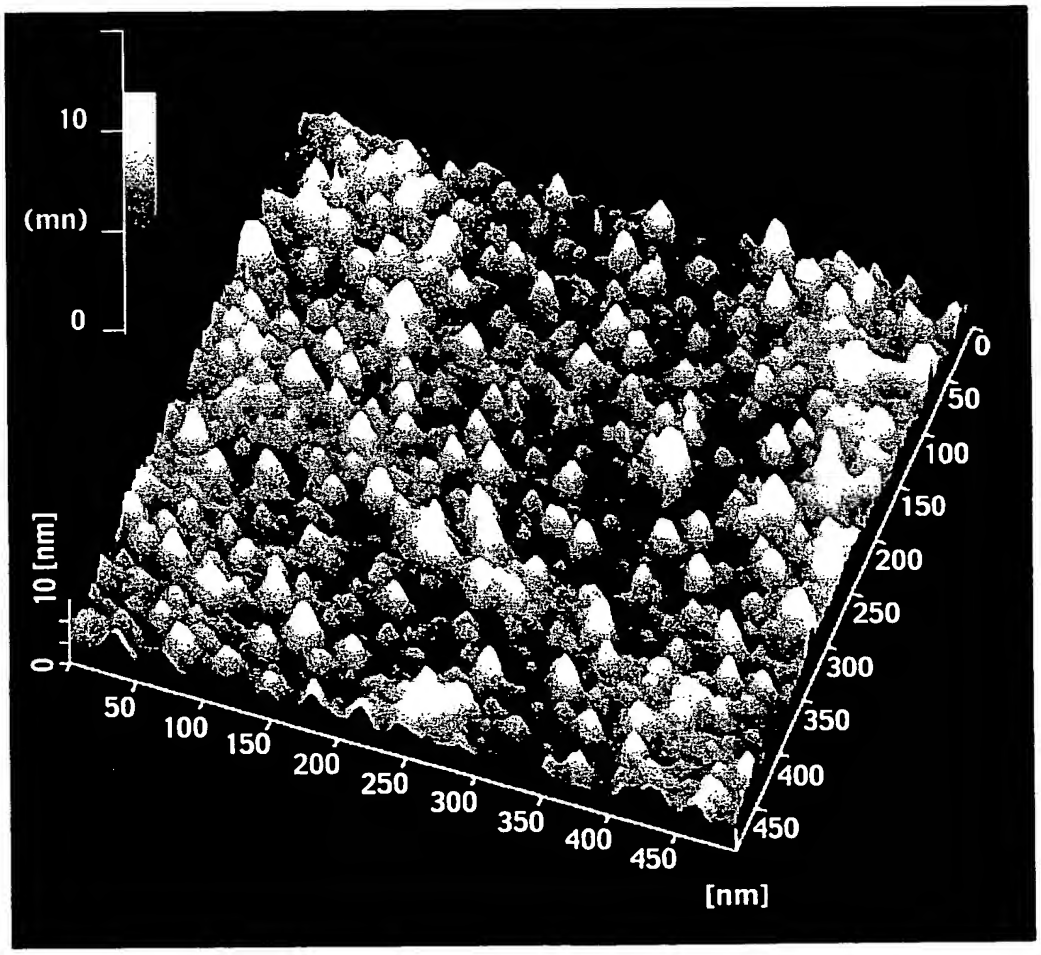

10
(mn)
0
10 [nm]
0
50
100
150
200
250
300
350
400
450
[nm]
0
50
100
150
200
250
300
350
400
450

FIG.20

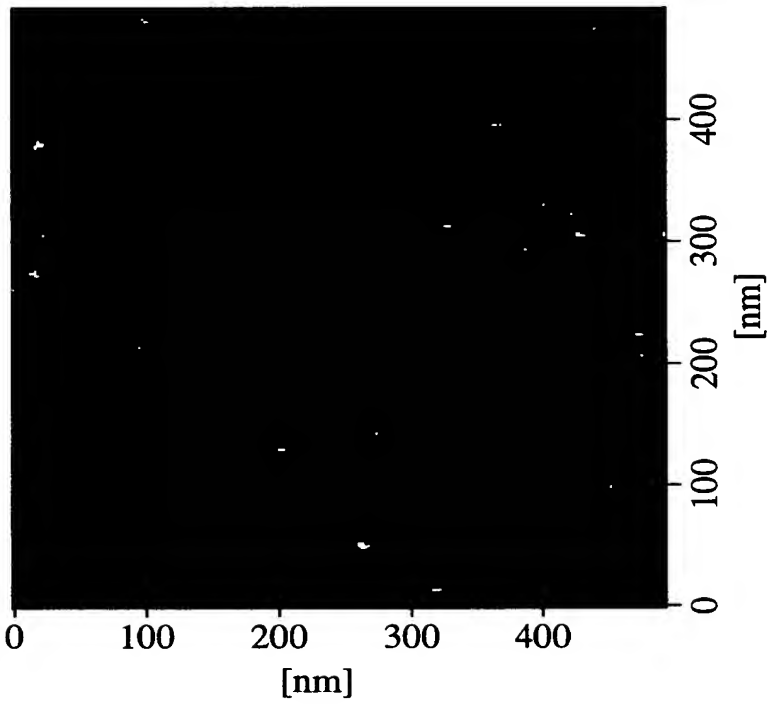

0
100
200
300
400
[nm]
0
100
200
300
400
[nm]

FIG.21

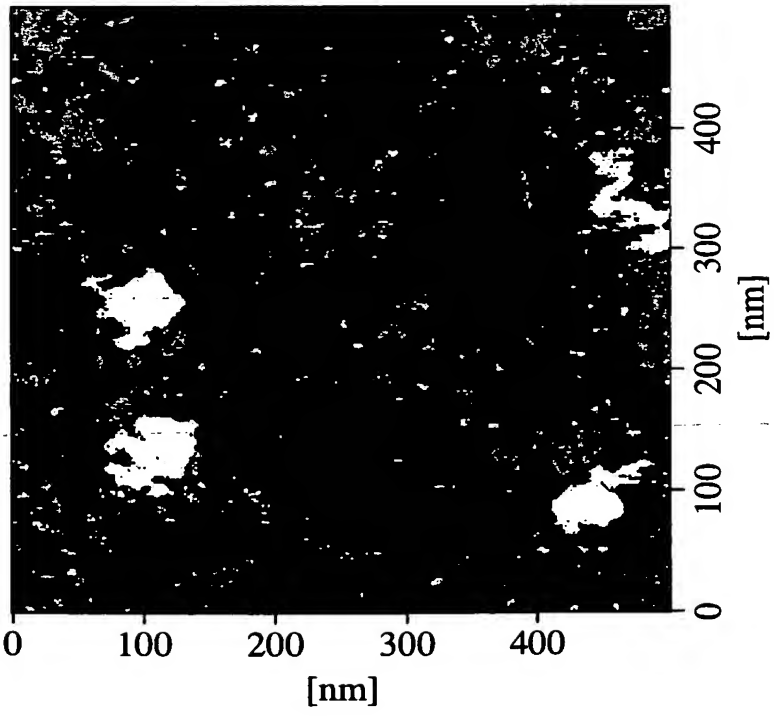

0
100
200
300
400
[nm]
0
100
200
300
400
[nm]

FIG.22

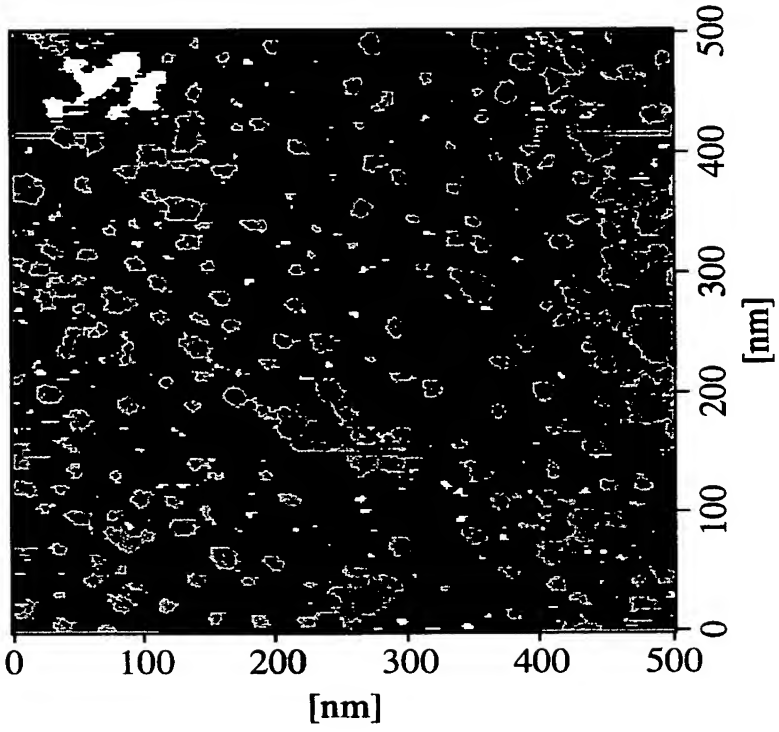

0
100
200
300
400
500
[nm]
0
100
200
300
400
500
[nm]

FIG.23

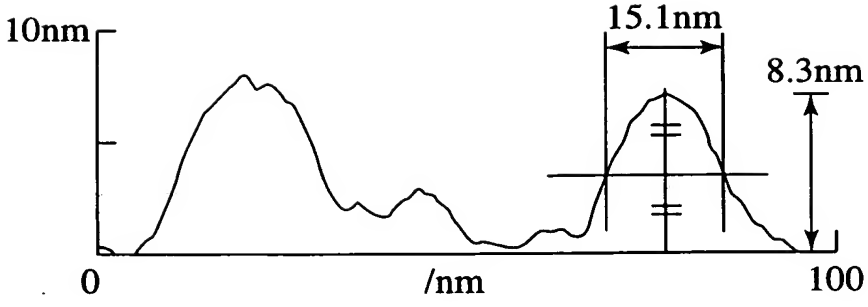

10nm
15.1nm
8.3nm
0
/nm
100

FIG.24

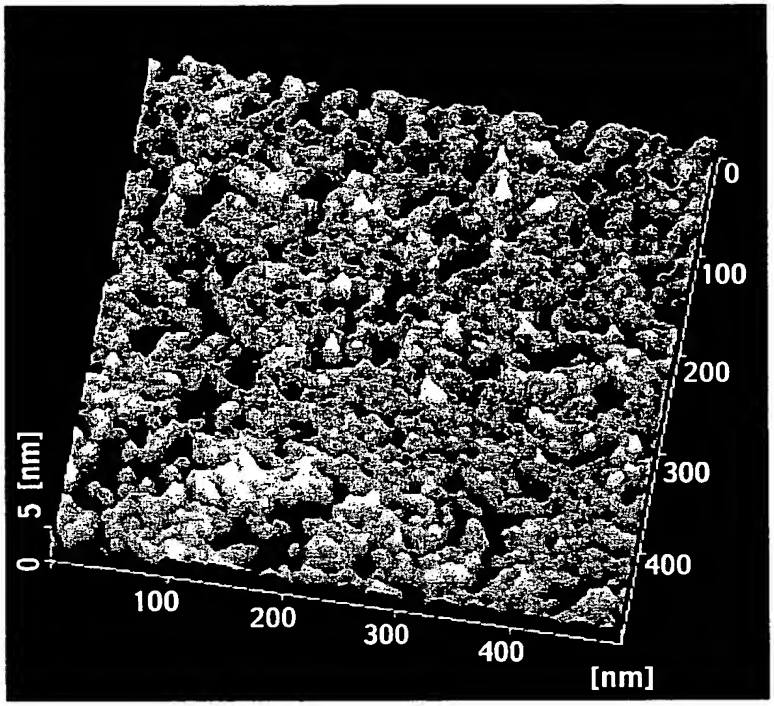


FIG.25

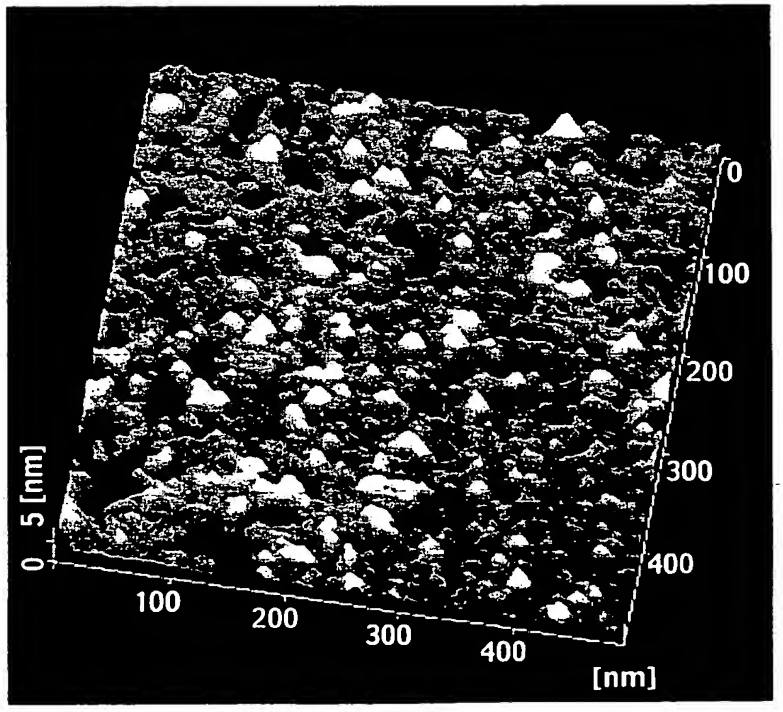


FIG.26

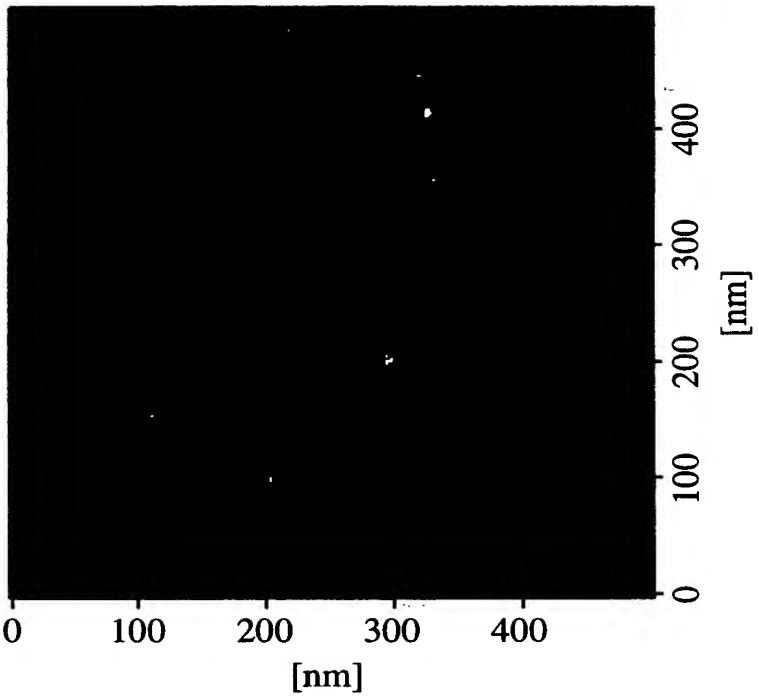
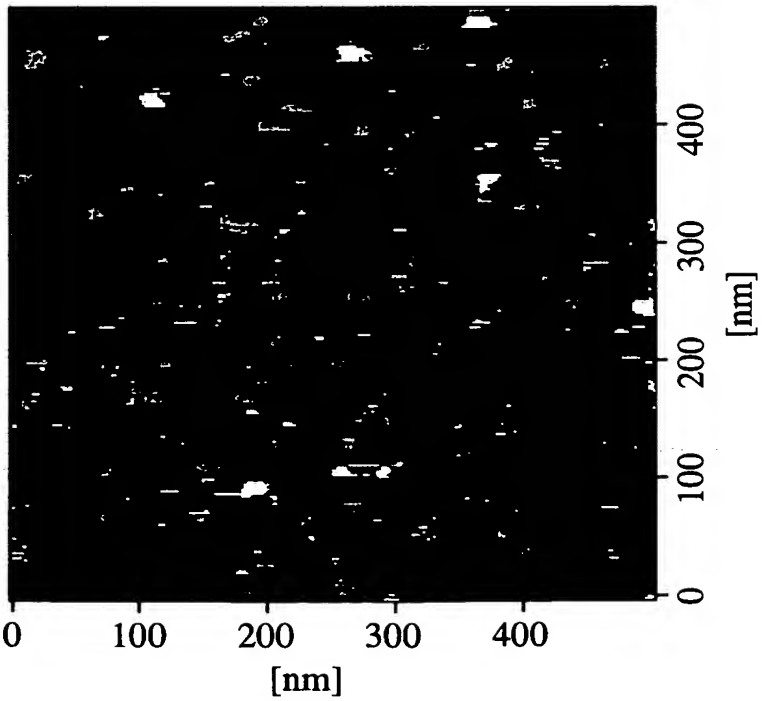

0
100
200
300
400
[nm]
0
100
200
300
400
[nm]

FIG.27


0
100
200
300
400
[nm]
0
100
200
300
400
[nm]